

SITE: Velsicol Chemical

CITY: Beaumont, TX

TIER: 3

EPISODE NO.: ~~2645~~ 4093

NATIONAL DIOXIN STUDY

FINAL SITE REPORTS

FOR

TEXAS TIER 3 and TIER 6 SITES
(EPA Region VI)

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INTRODUCTION

The Texas Water Commission (TWC), Division of Field Operations collected soil samples from Tier 3 and Tier 6 sites in Texas for the U. S. Environmental Protection Agency's "National Dioxin Study". This study was conducted by the Texas Water Commission under Assistance Agreement, Assistance I.D. No. X-811961-01-0 and Assistance Amendment, Assistance I.D. No. X-811961-01-1. The statutory authority for this study is the Clean Water Act, as amended, Section 104 and the regulatory authority is found in 40 C.F.R. Part 30.

The Texas Water Commission's Tier 3 and Tier 6 sampling contract is under the direction of Mr. David Barker, Section Chief of the Emergency Response Unit of the Field Operations Division. Mr. Barker acted as the project manager for this contract and was assisted by staff members: Dr. Priscilla Seymour, Mr. Bill Hupp, Mr. Daniel McClellan, and District personnel.

The purpose of the "National Dioxin Study" is to determine the nature and extent of environmental contamination from 2,3,7,8-TCDD, the most toxic isomer of dioxin. Potentially contaminated sites were divided into seven categories or tiers. This study focused on Tier 3 and Tier 6, both tiers containing industrial facilities that formulated or produced pesticides. The Tier 3 sites consist of facilities and associated waste disposal sites where dioxin contaminated pesticides were formulated, particularly those facilities where 2,4,5-TCP and its derivatives were formulated or blended into pesticides (this process includes repackaging). The seven pesticides of concern are: 2,4,5-T, silvex, erbon, ronnel, hexachlorophene, isobac 20, and 2,4,5-TCP. Tier 6 sites consist of pesticide manufacturing facilities where improper quality control during production of certain organic chemicals (polyhalogenated phenols and ortho-halophenols) and pesticides (excepting those manufactured from 2,4,5-TCP) could have led to the formation of 2,3,7,8-TCDD.

Nationwide there were 583 Tier 3 sites and 60 Tier 6 sites. A statistically representative sample of these facilities was chosen for sampling. The results will be used to evaluate the potential for contamination across all sites and the percentage of other sites requiring further sampling and analysis.

In Tier 3, 99 sites were targeted for sampling nationwide: 50 were selected randomly from the FIFRA and TSCA Enforcement System (FATES) database of 258 facilities, a statistical sample of 6 was chosen from the 31 largest facilities (based on production), and 44 were statistically chosen based on EPA regional distribution from the remaining 227 facilities. An additional 49 sites nationwide were chosen by the EPA Regions as having a high likelihood of contamination. Of the 583 Tier 3 sites nationwide, 51 were in EPA Region VI. From these 51 sites, 6 were chosen for sampling. All six sites are in Texas. These sites are: Bes-Tex Insecticides Co., Inc. in San

Angelo, TX (silvex); C. J. Martin Co. in Nacogdoches, TX (ronnel); CSA, Limited in Houston, TX (ronnel); Drew Chemical Corp. in Houston, TX (2,4,5-TCP); National Chemsearch Corp.-Mohawk Labs Division in Irving, TX (2,4,5-T); and Velsicol Chemical Corp. in Beaumont, TX (2,4,5-T with Tier 6 chemicals: dichloropropranilide, dimethylamine dicamba, and dicamba).

In Tier 6, 60 facilities were identified from the SRI directory of chemical producers (1977-1982), the FATES database, Dioxins by Esposito, et. al. (EPA-600/2-80-197, November 1980), and EPA Regional recommendations. A group of 20 facilities was chosen as a statistical sample of the 60 facilities identified. Three of these sites are in EPA Region VI with two being located in Texas. The 2 Texas sites are: Chemall, Inc. in Groves, TX (pentachlorophenol) and Velsicol Chemical Corp. in Pasadena, TX (methyl parathion).

This report presents the findings from the sampling investigations conducted at the Tier 3 and Tier 6 sites in Texas by the Texas Water Commission for the U.S. Environmental Protection Agency. This report consists of a description of the sampling methodology used during this study and individual site reports for each site in Tier 3 and Tier 6. Each site report includes sections on the site description and background, a site map, the sampling investigation, the analytical results, and recommendations for further action. The appendices include sample point descriptions with sample points shown on site maps, tables of sample results, photographs of sample points, U.S.G.S. maps showing site location, and copies of the chain of custody documents and laboratory shipment records.

METHODS OF SAMPLING

Sample Selection

At all sites sampled in Tier 3 and Tier 6 in Texas by TWC, a targeted or directed approach was used as opposed to a random approach. Through reconnaissance investigations and file investigations, information was gathered on all sites of chemical throughput, from production to distribution. It was therefore possible to focus on areas within the sites most likely to be contaminated with dioxin. Specifically, these targeted areas included places where potential or known spills or leaks could have occurred and the associated drainage pathways from those areas. For example, typical areas chosen were loading docks, storage areas, warehouses, waste water ponds, storm water drainage areas and ditches, and waste disposal areas on site. This approach allowed concentration of sampling in those areas with potentially higher contamination. As the 2,3,7,8-TCDD dioxin isomer adheres to soil particles, erosion and accumulation points were also important.

For each site, a Site-Specific Sampling Plan was prepared as part of the Site-Specific Work Plan. Within this plan the methodology, sample point description, sample rationale, map indicating sample locations, number of samples chosen and quality assurance/quality control parameters were defined. Additional samples were included in the sampling plan for quality assurance/quality control. These included: 2 field blanks (one to spike with native 2,3,7,8-TCDD), 1 duplicate and 1 performance evaluation sample containing a known quantity of 2,3,7,8-TCDD. These samples were included in each batch of 24 samples. All sampling was conducted in accordance with the EPA's "Final Draft Report - Sampling Guidance Manual for the National Dioxin Study" (July 1984).

Sample Collection and Documentation

All sampling personnel wore EPA level C or D protective clothing during sampling. The sampling kits were provided through EPA Region VI by Versar, Inc. These kits consisted of tulip bulb planters, 1-quart wide-mouth glass jars with teflon liners in the lids, and required packing materials. From each sample point cores 4 inches deep were taken of the soil or sediment. If the soil was too hard for the bulb planter, a garden trowel was used to loosen the soil and then the bulb planter was used. The cores were placed on clean aluminum foil (to prevent cross contamination), twigs and stones were removed and then the soil was carefully placed into the sample jar to fill it at least half full. The lid was placed on the jar after checking that the teflon liner was in place. The jar was numbered, dated, recorded, and then photographed at the sample location. Time, date and sample number were marked either on a chalkboard or notebook and included in the sample photo for future reference.

Field data were filled out, a sample tag was attached to the jar, the jar was sealed with strapping tape, a numbered label was placed on the jar, and the chain-of-custody seal was applied. The field data forms required were: Contract Lab Program (CLP) Dioxin Shipment Record for soils and Sample Control Center Dioxin Shipment Record for water, sample tags (individually numbered), and chain-of-custody records. Samples were kept cool and in a dark or shaded place (boxes) until sampling was completed. Water samples taken were placed in a cooler on ice.

Sample Shipment

All samples were packaged in accordance with the U.S. Department of Transportation Exemption DOT-E 7909 - for the shipment of samples that may contain 2,3,7,8-TCDD. The sample shipping boxes were then labeled as required by the Department of Transportation and Federal Express. The samples were shipped by Federal Express Restricted Articles Service, Priority 1 (overnight delivery). All packages were received by the laboratories the day following shipment with no damage reported.

Sample Documentation

For each sample there is a chain-of-custody record, a dioxin shipment record, an assigned study number (beginning with "DF"), a sample tag, and a photograph of the sample at the sample site. Also available is a sample site map with sample description for each sample point. For documentation that was not affixed to the sample jar, copies of the records and photographs can be found in the appendices of this report.

TIER 3 SITE REPORTS

SITE REPORT

Velsicol Chemical Corporation (Tier 3)
(owned by Velsicol Chemical Corporation in Chicago, IL)
Beaumont, TX
Case #4094
Episode #2645

Site Description and Background

Velsicol Chemical Corporation is located on West Port Arthur Road five miles south of Cardinal Drive in Beaumont, Texas (Lat. 29 deg. 58'00", Long. 94 deg. 03'15"). This site is a 200-acre tract with the manufacturing facilities located in the northeast section of the site and the waste ponds located in the northwest section. The site is bordered on the east by West Port Arthur Road and agricultural lands owned by Garth Co., on the north by an industrial area owned by Colonial Pipeline Co., on the west by agricultural lands owned by Mobil Oil Corp., and on the south by agricultural lands owned by the Grace A. Herbert Estate. Across West Port Arthur Road from the southeast corner of the Velsicol site is a commercial and residential area.

The Velsicol Beaumont plant was built in 1965 by Mobil Chemical Corp. and was used to produce terephthalic acid until 1974. In 1974 Velsicol Chemical Corp. purchased the site from Mobil Chemical. Velsicol Chemical is an organic chemical and pesticide manufacturer headquartered in Chicago, Illinois. In response to the EPA information request letter and Tier 3 questionnaire, Velsicol indicated that they had used 2,4,5-T salts and esters in the formulation of herbicides from 1975 to 1978 and in 1981. They used 598,721 pounds of 2,4,5-T during this period. They currently produce Banvel (dicamba), benzoic acid, calcium bromide and hexachlorophene (as of November 1984). Velsicol was selected for sampling by the EPA as 2,4,5-T could potentially have been contaminated with 2,3,7,8-TCDD.

Examination of TWC files and interviews with company representatives indicated that 2,4,5-T was brought into the site by truck and railcar. Shipments were unloaded at the truck and railcar unloading areas. These areas are adjacent (see map) to the Banvel Warehouse immediately south of the railroad tracks. The 2,4,5-T was transferred to the warehouse where it was used in the formulation of herbicides. It was also stored in this warehouse until its delivery to customers by truck. During the period of production in which 2,4,5-T was used Velsicol contracted with Browning Ferris in Nederland, Texas to haul off their waste. Wastes were taken to Chemical Waste Management in Port Arthur, Texas for land disposal. Class I waste, dicamba acid, was shipped offsite for disposal at Texas Ecologists, Inc. in Robstown. Process wastewater and contaminated stormwater was disposed of by on site deep well injection or as allowed by permit (TX0003671), treated on site and discharged. All discharged water enters the county ditch on the

facility east boundary where it travels to Rodair Gully then to Taylor Bayou Segment 0701 of the Neches-Trinity Coastal Basin.

In determining possible pathways for soil contamination the most likely areas appeared to be where spills or contaminated runoff might occur. The areas of most concern were associated with the tank truck and railcar unloading area, the warehouse loading docks, the wastewater and stormwater ponds, the deep wells and the drainage ditches. Several public complaints have been filed with state and local authorities over the last ten years. Primarily these complaints have been registered with the local health department, the Texas Air Control Board and the Texas Water Commission. These complaints usually concerned odor problems associated with the plant and the drainage ditches in which Velsicol discharges processed wastewater and stormwater. Currently Velsicol is under enforcement investigation with the EPA, the Texas Water Commission, and the Texas Air Control Board for solid waste and wastewater permit violations.

This site is located in the drainage area of Segment 0701 of the Neches-Trinity Coastal Basin. The soil structure for this area is the Beaumont Formation consisting primarily of clay mixed with sand and silt. Logs from the drilling of monitor wells on site near the wastewater ponds indicate that the first 25 feet consists of hard brown clay with a band of silt 1 to 4 feet wide at approximately 12 to 14 feet. Sand is found below 25 feet and is found as shallow as 19 feet eastward of the wastewater ponds. This plant is located on the upper unit of Chicot aquifer.

Sample Investigation

A reconnaissance inspection was performed on February 2, 1985 by Priscilla Seymour and Daniel McClellan (TWC) at the Velsicol Chemical Corporation Beaumont site. During the reconnaissance inspection Howard Baker, the environmental manager, and Connie Matthews (TWC-District 6) were present.

As part of the Site-Specific Work Plan, a Site-Specific Sampling Plan was prepared. The directed or targeted approach was used in preparing the sampling plan as specific information was available on this site identifying areas of potential contamination. This specific information was available from the site investigation, historical information provided by TWC-District 6 personnel and from TWC files. The methodology was approved by the EPA in the "Final Draft Report - Sampling Guidance Manual for the National Dioxin Study" (July 1984).

The sampling plan was developed to concentrate on possible spill areas or those subject to potentially contaminated runoff. Areas of particular concern were: near the truck and railcar unloading facilities, drainage pathways from unloading areas, drainage pathways from 2,4,5-T storage and warehouse areas, potential spill areas near disposal wells (both active and inactive), sediments from wastewater ponds, sediments from stormwater runoff

ditches, and plant drainage ditches carrying runoff offsite. Areas not sampled were not associated with 2,4,5-T production or drainage pathways from the 2,4,5-T production area. (See the site map.)

In preparing a Site-Specific Work Plan, a Health and Safety Plan was also prepared. In preparation of this plan no unusual hazards were expected or encountered. All sampling personnel wore EPA level C protective clothing and equipment and had undergone a complete physical examination within the past year.

An EPA/State Community Relations Checklist was prepared for the Site-Specific Work Plan. Potentially interested or affected parties were identified in the plan along with the EPA and state community relations contacts. It is the State's normal procedure to provide information only upon request. If sample results should be determined to be significant the State and EPA will coordinate notification of interested or affected parties in accordance with the Community Relations Checklist.

Sampling was performed on March 28, 1985 by Bill Hupp, Connie Matthews, Daniel McClellan and Priscilla Seymour of the TWC. Samples were taken between 10:25 a.m. and 4:10 p.m. The weather conditions were overcast skies with temperatures ranging from 75-80 degrees F. All samples were taken using the sample protocol established by the EPA "Final Draft Report - Sampling Guidance Manual for the National Dioxin Study" (July, 1985). A total of 39 samples were collected for analysis. These samples consisted of 29 soil or sediment samples, 2 water samples and 8 quality control samples. All soil/sediment samples were grab samples taken with tulip bulb planters and were from the surface to 4 inches deep. The quality control samples included 2 duplicate soil samples, 4 soil blanks with 2 to be spiked with 2,3,7,8-TCDD by the lab, and 2 performance samples provided by EPA containing a known quantity of 2,3,7,8-TCDD. Additionally, the lab provided 1 method blank.

Analytical Results

The soil samples from this site were shipped by Federal Express as two batches to Environmental Testing and Certification (ETC) in Edison, New Jersey and the water samples were sent to U.S. EPA-ERL Duluth, in Duluth, Minnesota on March 29, 1985. All samples were shipped in accordance with the EPA Guidance Manual and the requirements of the Department of Transportation and Federal Express. The two water samples were preserved by packing the sample jars on ice for shipment. The samples were received on March 30, 1985. The results are included in Appendix A. The 2,3,7,8-TCDD isomer was not detected in any of the field samples.

The analysis by ETC was evaluated by the chief of the laboratory section at the EPA Region VI Environmental Services, Houston Branch. The results of the analysis performed by ETC were evaluated for data completeness, instrument tuning, chromatography, blank analysis, matrix spikes,

duplicates, surrogates and field blanks. The results were acceptable for all parameters except data completeness.

During the original analysis six samples from the two batches failed analysis. Those six samples were rerun with four of the samples then found acceptable from the repeat analysis. The two samples remaining unacceptable were DF014721 and DF014723. Resubmission of the corrected B-1 form and raw data sheets was required. The results were determined to be provisional pending receipt of data.

The lab repeatedly ran samples DF014723 and DF014805. Sample DF014805 was taken from wastewater pond 1A and presented too much interference to analyze. It was recommended that resampling and reanalysis be done. The resubmitted data for DF014805 failed surrogate and internal standard criteria, attributed by the lab to a matrix effect. The EPA Houston Branch for Environmental Services noted that the lack of any signal for surrogate and internal standard ions was not due to matrix, as the original submission of data on this sample had those ions although the values were outside of the acceptance criteria.

Samples DF014720 in batch 01 and DF014815 in batch 02 were analyzed as the performance evaluation samples. Sample DF014720 had a reported value of 6.04 ppb 2,3,7,8-TCDD and a true value of 6.4 ppb. Sample DF014815 had a reported value of 7.36 ppb 2,3,7,8-TCDD with a true value of 6.4 ppb. These values were found acceptable by the EPA as there were no acceptance or action limits provided on this Sigma 14 Code. Samples DF014708 in batch 01 and DF014810 in batch 02 were analyzed as duplicates; samples DF014712 in batch 01 and DF014813 in batch 02 were the native spikes; and samples DF014704 in batch 01 and DF014807 in batch 02 were analyzed as the blanks. All the analysis for these samples were found acceptable by the EPA Environmental Services Houston Branch.

The EPA is currently analyzing several samples from this site for dioxin-furan isomers. The samples chosen were from the areas most likely to have been subject to spills at loading and storage areas, well blowouts and down gradient from runoff areas. The samples included were DF014704, DF014705, DF014706, DF014710, DF014712, DF014714, DF014716, DF014718, DF014721, DF014723, DF014805, DF014807, DF014809, DF014812, DF014813, DF014814. These samples were analyzed by U.S. Testing Inc. and results are pending EPA Environmental Services Houston Branch review.

Recommendation and Actions

There is no action currently recommended for this site based on the results of this study as 2,3,7,8-TCDD was not detected in any of the samples. If there should be any detection of the dioxin-furan isomers PCDD or PCDF then cleanup of the site could be indicated. Any recommendation for a site cleanup based on further sample results would be proposed only after the TWC in consultation with the EPA and CDC deemed it necessary.

If cleanup was determined to be necessary it would be enforced by either the EPA or the TWC, Division of Hazardous and Solid Waste.

TIER 3 SAMPLE POINT DESCRIPTIONS

SAMPLE POINT DESCRIPTIONS

Velsicol Chemical Corporation
Beaumont, Texas
Sampling Date - February 2, 1985

Sample No.

1. Soil from low area next to uncontaminated stormwater pond discharge ditch at pond outfall, 40 feet east of stormwater settling pond and 90 feet south of pond discharge canal (no standing water, but damp).

Gray, clayey material with some small shell (fill).

2. Sediment at outfall 001 (uncontaminated stormwater) in W. Port Arthur Road drainage ditch. Approximately 6 inches of water was in the ditch, with no visible flow.

Gray, clayey material.

3. Sediment at outfall 002 (uncontaminated stormwater) in W. Port Arthur Road drainage ditch, 18 feet south of culvert below main plant entrance (approximately 8 inches water in ditch, no flow).

Gray/black layered clayey material.

4. Blank.

5. Sediment from the of drainage ditch serving truck and railcar loading area. Sample point is at the end of the drainage ditch, 12 feet north of northernmost railroad track and 9 feet east of fence corner nearest tank truck loading area (approximately 8 inches water in ditch, no flow).

Fine grain silty material, predominantly black color.

6. Sediment from the drainage ditch between the truck loading area and the railroad tracks, 35 feet south of fire hydrant for the tank truck loading area and next to the culvert draining the ditch between the northern and middle railroad tracks (approximately 12" water in ditch, no flow).

Depositional material - fine- to medium-grained sand, gray and blackish in color.

7. Soil from railcar loading area, approximately 40 feet east of sludge pump orange pipe in ditch between north and middle railroad tracks (no water in the ditch).

**Sample
No.**

Mixture of sediment, shell (fill), and slightly clayey material - all grayish-brown color.

8. (Duplicate of 7).

9. Soil from railcar loading area, at the south side of the tank truck loading area 10 feet west of the pump motors.

Mottled clayey material light brown/tan and rust in color mixed with slightly medium/fine sand.

10. Soil from the area between the southernmost railroad tracks and railroad loading dock 10 feet west of the Banvel warehouse and 2 feet north of retention wall for former 2,4,5-T storage area.

Below 2-3 inches of shell fill - grayish-brown clayey material.

11. Sediment from drainage area east of pink tree valve at opening to culvert draining ditch between northernmost and middle railroad tracks (approximately 8 inches water in ditch, no flow).

Black clayey material.

12. Blank to spike.

13. Sediment from drainage ditch downstream of confluence of ditches serving truck and railcar loading areas, approximately 25 feet south of broken fence and 54 feet west of property line fence adjacent to West Port Arthur Road (approximately 2 inches water pooled in ditch - cattails and other vegetation in ditch).

Grayish clayey material.

14. Sediment at the confluence of the drainage ditches serving the Banvel Warehouse loading area and southernmost railroad tracks, above culvert opening beneath southernmost railroad tracks 50 feet southeast of pink tree valve (approximately 8 inches water, no flow).

Black clayey material.

15. Soil from the drainage ditch at the southeast corner of the Banvel Warehouse loading area, below culvert beneath road and 75 feet east of fire hydrant (approximately 3 inches water, no flow).

Gray/black clay.

**Sample
No.**

16. Sediment from West Port Arthur Road drainage ditch immediately downstream of outfall for stormwater runoff from railroad/tank truck loading areas, 15 feet east of utility pole #2779 (approximately 10 inches of water, slight flow).

Gray/black clay.
17. Sediment from West Port Arthur Road drainage ditch above culvert which is downstream of the south plant entrance road. (Approximately 10 inches of water, slight flow)

Gray/black clay with some crushed shell (fill).
18. Soil from area immediately south of disposal well #2 (inactive). A well blowout was documented in 1976.

Grayish-brown even-toned clay/sand mixture.
19. Soil from low drainage point west of the formerly unknown inactive disposal well location (30 feet south of inactive disposal well #2), approximately 6 feet south of newly discovered well.

Grayish-brown even-toned clay/sand mixture.
20. P/E
21. Soil from area adjacent to disposal well #5 (WDW - 155) in an area of no vegetative growth, approximately 18 feet west of well.

Light brown clay/sand mixture.
22. Soil from area adjacent to disposal well #5 (WDW - 155) in an area of no vegetative growth, approximately 50 feet northwest of well.

Light brown clay/sand mixture.
23. Soil from area adjacent to disposal well #4 (WDW - 125) in an area of no vegetative growth, approximately 48 feet southeast of well.

Light colored sandy/slight clay with intermingled rust coloration.

**Sample
No.**

24. Soil from area adjacent to disposal well #4 (WDW - 125) in an area of no vegetative growth, approximately 54 feet west of disposal well #4.

Sandy tan colored soil.
25. Soil from unauthorized filter media (pre-disposal well treatment) storage pile 100 feet southwest of #4 disposal well in an area of no vegetative growth.

Sandy clay marbled with red, tan, and gray coloration.
26. Soil from unauthorized filter media (predisposal well treatment) storage pile 150 feet southwest of #4 disposal well.

Light brown clayey material with mix of fine grain sand or loam.
27. Water sample from new groundwater monitor well #7 adjacent to Pond 2A.

Clear, unclouded water.
28. Water sample from new groundwater monitor well #6 adjacent to Pond 1A.

Clear, unclouded water.
29. Sediment sample from immediately below east influent line from wastewater treatment system into Pond 1A. Pond (1A) was approximately 6 feet below level observed during recon inspection on 2/6/85.

Black/brown clayey sludge material with strong phenolic odor.
30. Sediment sample from immediately below the influent line from wastewater treatment system into Pond 1A.

Black/brown clayey sludge material with strong phenolic odor.
31. Blank.
32. Soil from area next to disposal well #1 (inactive), approximately 27 feet west of disposal well #1 in low drainage area.

Light tan with traces of rust coloration - clay/sand mixture.

**Sample
No.**

33. Soil from area next to disposal well #1 (inactive), in the drainage ditch immediately south.

Light tan clay/sand mixture.
34. (Duplicate of 33).
35. Soil from area next to disposal well #3 (inactive) 15 feet west of the disposal well in a low drainage area.

Tan clay and fine silty material with some crushed shell (fill).
36. Soil from area north of disposal well #3 (inactive) in low drainage point.

Gray clayey material.
37. Blank to spike.
38. Soil from area southeast of chemical burn pit, taken in low drainage point on burned debris pile.

Brown clay with some crushed shell (fill).
39. P/E

SAMPLE RESULTS

VELSICOL CHEMICAL CORP. (BEAUMONT)

** THE MAPPER SYSTEM **

DATE 20-SEP-85 15143152 RID 7 23-JUL-85 DIOXIN
DIOXIN STUDY RESULTS 8000602

CASE NUM.	EPISODE	STA.	TAG	SSC	LAB ID.	TCDD	DET.	DESCRIPTION	ALLOQUOT	MATRIX	TIME	STATION LOCATION
NUM	NUM	NUM	NUM	NUM	NUM	NUM	NUM	NUM	WT (G)			
4094	--	01	6-00395	DF014701	H2350	ND	0.48	FIELD	10.2	SOIL	1025	40FT E SW POND, 90FT S DISCHG CN
4094	--	02	6-00396	DF014702	H2351	ND	0.08	FIELD	10.8	SOIL	1040	OUTFALL 001, W PORT AUTHUR RD DT
4094	--	03	6-00397	DF014703	H2352	ND	0.15	FIELD	10.3	SOIL	1050	OUTFALL 002, W PORT AUTHUR RD DT
4094	--	04	6-00398	DF014704	H2353	NO	0.05	BLANK	10.6	SOIL	1100	(BLANK)
4094	--	05	6-00399	DF014705	H2354	NO	0.36	FIELD	10.2	SOIL	1105	12FT N RR TK, 9FT E OF FENCE
4094	--	06	6-00400	DF014706	H2355	NO	0.33	FIELD	10.3	SOIL	1115	35FT S OF FIRE HYDR, TT LOADING A
4094	--	07	6-00401	DF014707	H2356	NO	0.27	FIELD	11.6	SOIL	1125	40FT E ORANGE SLUDGE PUMP PIPE, RR
4094	--	08	6-00402	DF014708	H2357R	NO	0.46	DUPLICATE	10.3	SOIL	1125	(DUPLICATE OF #7)
4094	--	09	6-00403	DF014709	H2358	NO	0.19	FIELD	10.4	SOIL	1140	S TANK TRUCK LOG, 10FT W PUMP MOTOR
4094	--	10	6-00404	DF014710	H2359	NO	0.07	FIELD	12.8	SOIL	1200	BTW 2,4,5-T STOR & S RR TRACKS
4094	--	11	6-00405	DF014711	H2360	NO	0.22	FIELD	10.7	SOIL	1207	BTW N & MID RR, E PINK TREE VALVE
4094	--	12	6-00406	DF014712	H2361S	1.02	--	BLANK TO SPIKE	10.6	SOIL	1222	(BLANK TO SPIKE)
4094	--	13	6-00407	DF014713	H2362	NO	0.20	FIELD	10.6	SOIL	1225	25FT S BROKEN FEN, 54FT W PROP LN
4094	--	14	6-00408	DF014714	H2363	NO	0.15	FIELD	10.9	SOIL	1230	CULVERT S RR TK, 50FT SE TREE VL
4094	--	15	6-00409	DF014715	H2364	NO	0.46	FIELD	10.9	SOIL	1235	CULVERT UNDER ROAD, 75FT E FR HYD
4094	--	16	6-00410	DF014716	H5402	NO	0.10	FIELD	10.4	SOIL	1250	15FT E UTLY POLE #2779, W PT A RD
4094	--	17	6-00411	DF014717	H2366	NO	0.07	FIELD	10.5	SOIL	1307	CULVERT S PLANT ENTR, W PT AR RD
4094	--	18	6-00412	DF014718	H2367	NO	0.08	FIELD	10.3	SOIL	1325	S (ADJ) TO DISPOSAL WELL #2, INACT
4094	--	19	6-00413	DF014719	H5403	NO	0.11	FIELD	10.3	SOIL	1330	30FT S DISP WELL #2, UNKN WELL
4094	--	20	6-00414	DF014720	H2369	6.04	--	P.E.	10.3	P.E.	1353	(P.E.)
4094	--	21	6-00415	DF014721	H2370	NO	1.29	FIELD	10.6	SOIL	1355	18FT W DISP WELL #5
4094	--	22	6-00416	DF014722	H5404	NO	0.16	FIELD	10.6	SOIL	1400	50FT NW DISP WELL #5
4094	--	23	6-00417	DF014723	H2372	NO	--	FIELD	10.8	SOIL	1420	48FT SE DISP WELL #4
4094	--	24	6-00418	DF014724	H2373	NO	0.99	FIELD	11.7	SOIL	1425	54FT W DISP WELL #4
4094	--	25	6-00419	DF014801	H2374	NO	0.42	FIELD	11.3	SOIL	1430	100FT SW DISP WELL #4
4094	--	26	6-00420	DF014802	H2375	NO	0.90	FIELD	10.3	SOIL	1435	150FT SW DISP WELL #4
--	2645	27	6-00421	DF014803	2440	NO	0.20	FIELD	--	WATER	1450	GRNDWATER MON WELL #7, POND 2A
--	2645	28	6-00422	DF014804	2441	NO	0.03	FIELD	--	WATER	1455	GRNDWATER MON WELL #6, POND 1A
4094	--	29	6-00423	DF014805	H5405	NO	--	FIELD	11.6	SOIL	1505	SE WW SYS INFLU INTO POND 1A
4094	--	30	6-00424	DF014806	H5406	NO	1.52	FIELD	10.1	SOIL	1520	CENTER WW SYS INFLU INTO POND 1A
4094	--	31	6-00425	DF014807	H2378	NO	0.05	BLANK	10.7	SOIL	1530	(BLANK)
4094	--	32	6-00426	DF014808	H2379	NO	0.08	FIELD	10.5	SOIL	1535	27FT W DISP WELL #1, LOW AREA
4094	--	33	6-00427	DF014809	H2380	NO	0.05	FIELD	11.0	SOIL	1540	DRAINAGE DITCH S DISP WELL #3
4094	--	34	6-00428	DF014810	H2387R	NO	0.25	DUPLICATE	10.5	SOIL	1540	(DUPLICATE OF #33)
4094	--	35	6-00429	DF014811	H2381	NO	0.04	FIELD	10.9	SOIL	1545	15FT W DISP WELL #3, INACTIVE
4094	--	36	6-00430	DF014812	H2382	NO	0.10	FIELD	12.5	SOIL	1550	N (ADJ) DISP WELL #3
4094	--	37	6-00431	DF014813	H2383S	1.10	--	BLANK TO SPIKE	10.4	SOIL	1600	(BLANK TO SPIKE)
4094	--	38	6-00432	DF014814	H2384	NO	0.06	FIELD	11.0	SOIL	1605	SE CORNER CHEMICAL BURN PIT
4094	--	39	6-00433	DF014815	H2385	7.36	--	P.E.	10.4	P.E.	1610	(P.E.)

*SITE: VELVICOL CHEMICAL CORP. SITE CONTACT: HOWARD BAKER
*ADDRESS: WEST PORT ARTHUR ROAD BEAUMONT, TX 77705 PHONE: 409/722-8061
*LAT: 29-58' 00" LON: 94-03' 15" SAMPLE DATE: 3/28/85
*LAB: E T C 284 RARITAN CENTER PARKWAY EDISON, NJ 08837
*LAB: U.S. EPA-ERL-DULUTH 6209 CONGDON BLVD. DULUTH, MN 55804
*AIRBILLS: 768189656, 768189726
*CHAIN OF CUSTODY: 6-8535, 6-8536, 6-8537, 6-8538, 6-8539, 6-8540, 6-8534
*PPB SURROGATE & ACCURACY: DF014701=94, DF014702=97, DF014703=91, DF014704=100, DF014705=95, DF014706=95, DF014707=101, DF014708=93,
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DF014815=96

SAMPLE RESULTS

VELSICOL CHEMICAL CORP. (BEAUMONT)

** THE MAPPER SYSTEM **

DATE 20 SEP 85 15:43:52 RID 7 23 JUL 85 DIOXIN

DIOXIN STUDY RESULTS B000602

CASE NUM.	EPISODE.	STA.	TAG	SSC	LAB ID.	TCDD	DET	DESCRIPTION	ALICUOT	MATRIX	TIME	STATION LOCATION
* NUM	* NUM	* NUM	* NUM	* NUM	* NUM	* LIMIT			* WT (G)			
4094	--	01	6-00395	DF014701	H2350	ND	0.48	FIELD	10.2	SOIL	1025	40FT E SW POND, 90FT S DISCHG CN
4094	--	02	6-00396	DF014702	H2351	ND	0.08	FIELD	10.8	SOIL	1040	OUTFALL 001, W PORT ARTHUR RD DT
4094	--	03	6-00397	DF014703	H2352	ND	0.15	FIELD	10.3	SOIL	1050	OUTFALL 002, W PORT ARTHUR RD DT
4094	--	04	6-00398	DF014704	H2353	ND	0.05	BLANK	10.6	SOIL	1100	(BLANK)
4094	--	05	6-00399	DF014705	H2354	ND	0.36	FIELD	10.2	SOIL	1105	12FT N RR TK, 9FT E OF FENCE
4094	--	06	6-00400	DF014706	H2355	ND	0.33	FIELD	10.3	SOIL	1115	35FT S OF FIRE HYDRANT LOADING A
4094	--	07	6-00401	DF014707	H2356	ND	0.27	FIELD	11.6	SOIL	1125	40FT E ORANGE SLUDGE PUMP PIPE, RR
4094	--	08	6-00402	DF014708	H2357R	ND	0.46	DUPLICATE	10.3	SOIL	1125	(DUPLICATE OF #7)
4094	--	09	6-00403	DF014709	H2358	ND	0.19	FIELD	10.4	SOIL	1140	S TANK TRUCK LODG, 10FT W PUMP MOTOR
4094	--	10	6-00404	DF014710	H2359	ND	0.07	FIELD	12.8	SOIL	1200	BTW 2,4,5-T STOR & S RR TRACKS
4094	--	11	6-00405	DF014711	H2360	ND	0.22	FIELD	10.7	SOIL	1207	BTW N & MID RR, E PINK TREE VALVE
4094	--	12	6-00406	DF014712	H2361S	1.02	--	BLANK TO SPIKE	10.6	SOIL	1222	(BLANK TO SPIKE)
4094	--	13	6-00407	DF014713	H2362	ND	0.20	FIELD	10.6	SOIL	1225	25FT S BROKEN FEN, 54FT W PROP LN
4094	--	14	6-00408	DF014714	H2363	ND	0.15	FIELD	10.9	SOIL	1230	CULVERT S RR TKS, 50FT SE TREE VL
4094	--	15	6-00409	DF014715	H2364	ND	0.46	FIELD	10.9	SOIL	1235	CULVERT UNDER ROAD, 75FT E FR HYD
4094	--	16	6-00410	DF014716	H5402	ND	0.10	FIELD	10.4	SOIL	1250	15FT E UTLY POLE #2779, W PT A RD
4094	--	17	6-00411	DF014717	H2366	ND	0.07	FIELD	10.5	SOIL	1307	CULVERT S PLANT ENTR, W PT AR RD
4094	--	18	6-00412	DF014718	H2367	ND	0.08	FIELD	10.3	SOIL	1325	S (ADJ) TO DISPOSAL WELL #2 INACT
4094	--	19	6-00413	DF014719	H5403	ND	0.11	FIELD	10.3	SOIL	1330	30FT S DISP WELL #2, UNKN WELL
4094	--	20	6-00414	DF014720	H2369	6.04	--	P.E.	10.3	P.E.	1353	(P.E.)
4094	--	21	6-00415	DF014721	H2370	ND	1.29	FIELD	10.6	SOIL	1355	18FT W DISP WELL #5
4094	--	22	6-00416	DF014722	H5404	ND	0.16	FIELD	10.6	SOIL	1400	50FT NW DISP WELL #5
4094	--	23	6-00417	DF014723	H2372	ND	--	FIELD	10.8	SOIL	1420	48FT SE DISP WELL #4
4094	--	24	6-00418	DF014724	H2373	ND	0.99	FIELD	11.7	SOIL	1425	54FT W DISP WELL #4
4094	--	25	6-00419	DF014801	H2374	ND	0.42	FIELD	11.3	SOIL	1430	100FT SW DISP WELL #4
4094	--	26	6-00420	DF014802	H2375	ND	0.90	FIELD	10.3	SOIL	1435	150FT SW DISP WELL #4
--	2645	27	6-00421	DF014803	2440	ND	0.20	FIELD	--	WATER	1450	GRNDWATER MON WELL #7, POND 2A
--	2645	28	6-00422	DF014804	2441	ND	0.03	FIELD	--	WATER	1455	GRNDWATER MON WELL #6, POND 1A
4094	--	29	6-00423	DF014805	H5405	ND	--	FIELD	11.6	SOIL	1505	SE WW SYS INFLU INTO POND 1A
4094	--	30	6-00424	DF014806	H5406	ND	1.52	FIELD	10.1	SOIL	1520	CENTER WW SYS INFLU INTO POND 1A
4094	--	31	6-00425	DF014807	H2378	ND	0.05	BLANK	10.7	SOIL	1530	(BLANK)
4094	--	32	6-00426	DF014808	H2379	ND	0.08	FIELD	10.5	SOIL	1535	27FT W DISP WELL #1, LOW AREA
4094	--	33	6-00427	DF014809	H2380	ND	0.05	FIELD	11.0	SOIL	1540	DRAINAGE DITCH S DISP WELL #1
4094	--	34	6-00428	DF014810	H2387R	ND	0.25	DUPLICATE	10.5	SOIL	1540	(DUPLICATE OF #33)
4094	--	35	6-00429	DF014811	H2381	ND	0.04	FIELD	10.9	SOIL	1545	15FT W DISP WELL #3, INACTIVE
4094	--	36	6-00430	DF014812	H2382	ND	0.10	FIELD	12.5	SOIL	1550	N (ADJ) DISP WELL #3
4094	--	37	6-00431	DF014813	H2383S	1.10	--	BLANK TO SPIKE	10.4	SOIL	1600	(BLANK TO SPIKE)
4094	--	38	6-00432	DF014814	H2384	ND	0.06	FIELD	11.0	SOIL	1605	SE CORNER CHEMICAL BURN PIT
4094	--	39	6-00433	DF014815	H2385	7.36	--	P.E.	10.4	P.E.	1610	(P.E.)

*SITE: VELSICOL CHEMICAL CORP. SITE CONTACT: HOWARD BAKER

*ADDRESS: WEST PORT ARTHUR ROAD BEAUMONT, TX 77705 PHONE: 409/722-8061

*LAT: 29 58' 00" LON: 94 03' 15" SAMPLE DATE: 3/28/85

*LAB: E T C 284 RARITAN CENTER PARKWAY EDISON, NJ 08837

*LAB: U.S. EPA ERL-DULUTH 6209 CONGDON BLVD. DULUTH, MN 55804

*AIRBILLS: 768189656, 768189726

*CHAIN-OF-CUSTODY: 6-8535, 6-8536, 6-8537, 6-8538, 6-8539, 6-8540, 6-8534

*PPB SURROGATE & ACCURACY: DF014701=94, DF014702=97, DF014703=91, DF014704=100, DF014705=95, DF014706=95, DF014707=101, DF014708=93,

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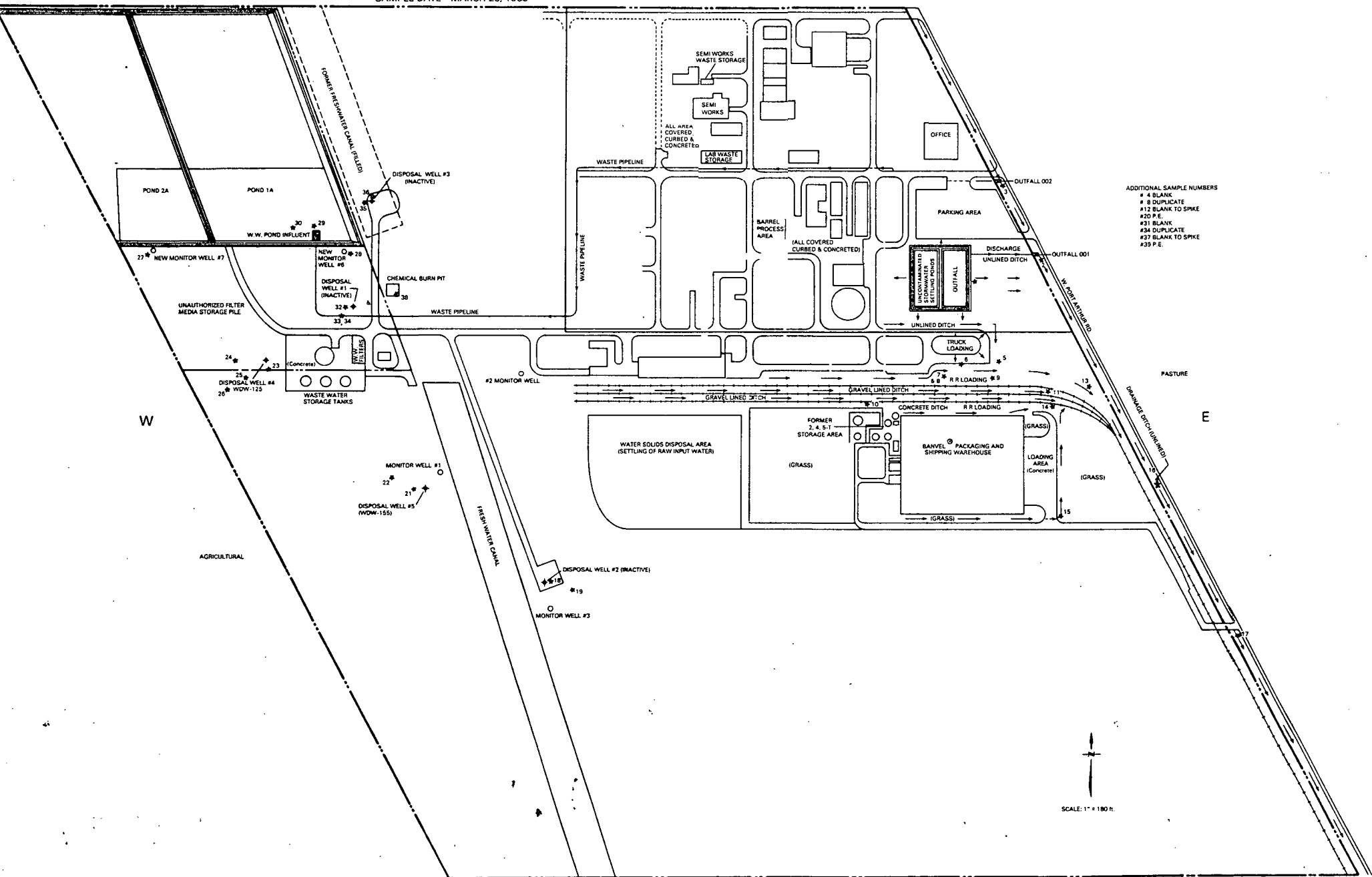
* DF014815=96

VELSICOL CHEMICAL CORPORATION
BEAUMONT, TEXAS

WEST PORT ARTHUR RD.
BEAUMONT, TEXAS
FACILITY CONTACT—HOWARD BAKER
SAMPLE DATE—MARCH 28, 1985

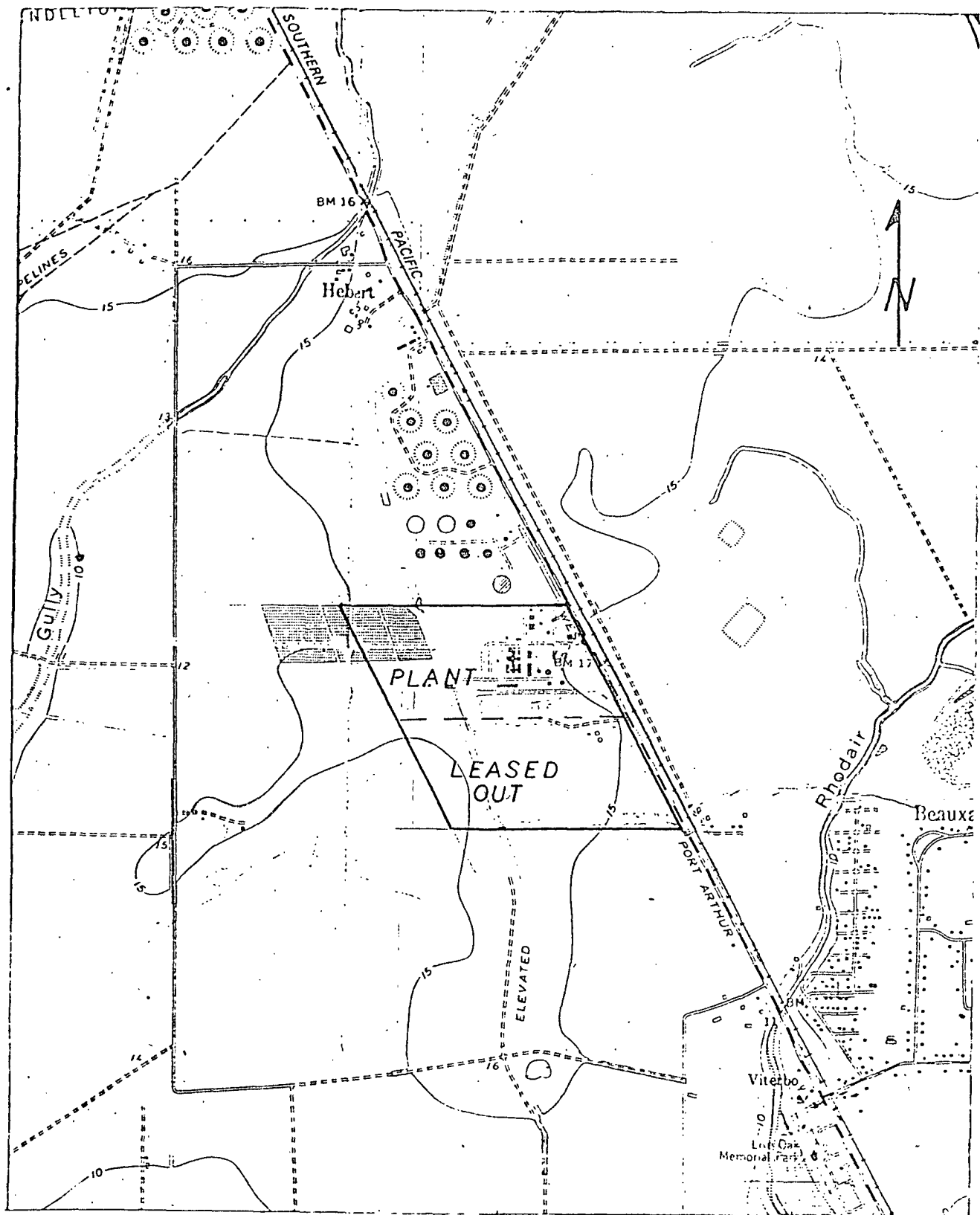
INDUSTRIAL PROPERTY

N



ADDITIONAL SAMPLE NUMBERS
4 BLANK
8 DUPLICATE
#12 BLANK TO SPIKE
#20 P.E.
#31 BLANK
#34 DUPLICATE
#37 BLANK TO SPIKE
#39 P.E.

SCALE: 1" = 180 ft.



VELSICOL CHEMICAL CORP.
NEDERLAND, TX.
TX04707

Appendix
C
SITE
PHOTOS



Sample #20 - P.E.







Sample #31 - blank







Sample #37 - blank to spike

Sample #39 - P.E.

Appendix D

CHAIN OF CUSTODY
RECORDS &
LABORATORY DOCUMENTS

Site: _____

CASE NO: 4094	BATCH NO: 3 of 6
---------------	------------------

Box 3 of 6

Site Name: <u>VELSICOL</u>	Sampling Office: <u>TDWR</u>	Ship To: <u>ETC</u>	
City & State: <u>BEAUMONT, TX</u>	City & State: <u>AUSTIN, TX</u>	<u>284 RARITAN CIRCLE</u> Date Shipped: <u>PKWY</u> <u>3/29/85</u>	
EPA Site No: 	Sampling Contact: <u>DAN MCCLELLAN</u> (name)		
Latitude: <u>N 29° 58' 00"</u>	Sampling Date: <u>3/28/85</u>		
Longitude: <u>W 94° 03' 15"</u>	Data Turnaround: 15-Day <input type="checkbox"/> 30-Day <input checked="" type="checkbox"/>		
Tier: 1 2 <input checked="" type="radio"/> 4 5 6 7 (circle one)			

[illegible]

CASE NO: 4094 BATCH NO: 01

Box 5 of 6

Site Name: VELSICOL	Sampling Office: TDWR	Ship To: ETC
City & State: BEAUMONT, TX	City & State: AUSTIN, TX	284 RARITAN CIRCLE
EPA Site No:	Sampling Contact: DAN MCCLELLAN (name)	Date Shipped: PKWY 3/29/85
Latitude: N. 29° 58' 00"	Sampling Date: 3/28/85	
Longitude: N 94° 03' 15"	Data Turnaround:	
Tier: 1 2 3 4 5 6 7 (circle one)	15-Day _____ 30-Day X	

[illegible]

[illegible]

CHAIN OF CUSTODY RECORD

[illegible]

CHAIN OF CUSTODY RECORD

[illegible]

2,3,7,8-TCDD

PROJ. NO.		PROJECT NAME															
SAMPLERS:		(Signature)															
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION												
13	3/28/85	1225	X		In ditch 25' S from broken fence & 54' W from prop. fence adj. to street	NO.	OF	-	CON-	TAINERS	REMARKS 2378-TCDD						
14	3/29/85	1230	X		Drainage ditch at culvert opening under RR tracks + 50' SE of Xmas tree	1											
15	3/29/85	1235	X		Extreme S. end of prop. at culvert under road + 75' E of fire hydrant	1											
16	3/28/85	1250	X		In drainage ditch W. Port Arthur Rd., 15' E of telephone pole #2779 (E of Barrel whse)	1											
Relinquished by: (Signature)		Date / Time	Received by: (Signature)			Relinquished by: (Signature)		Date / Time	Received by: (Signature)								
Relinquished by: (Signature)		Date / Time	Received by: (Signature)			Relinquished by: (Signature)		Date / Time	Received by: (Signature)								
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)			Date / Time		Remarks									

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Fed. Exp. Airbill # 768 189656 batch 01 Box 4 of 6

U.S. GOVERNMENT PRINTING OFFICE: 1984-//3-583

CHAIN OF CUSTODY RECORD

[illegible]

REMARKS

[illegible]

6-8540

BATCH NO: 02

CLP DIOXIN SHIPMENT RECORD

Box 4 of 4

Site Name: <u>VELSICOL</u>	Sampling Office: <u>TDWR</u>	Ship To: <u>ETC</u>
City & State: <u>BEAUMONT, TX</u>	City & State: <u>AUSTIN, TX</u>	<u>294 BARITAN CIRCLE</u> Date Shipped: <u>PKWY</u>
EPA Site No: _____	Sampling Contact: <u>DANIEL MCCLELLAN</u> (name)	<u>3/29/85</u>
Latitude: <u>N 29° 58' 00"</u>	Sampling Date: <u>3/28/85</u>	
Longitude: <u>W 94° 03' 15"</u>	Data Turnaround: 15-Day _____ 30-Day <u>X</u>	
Tier: 1 2 <u>3</u> 4 5 6 7 (circle one)		

[illegible]

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6-8542

[illegible]

Dallas, Texas 75270

6-8544

CHAIN OF CUSTODY RECORD

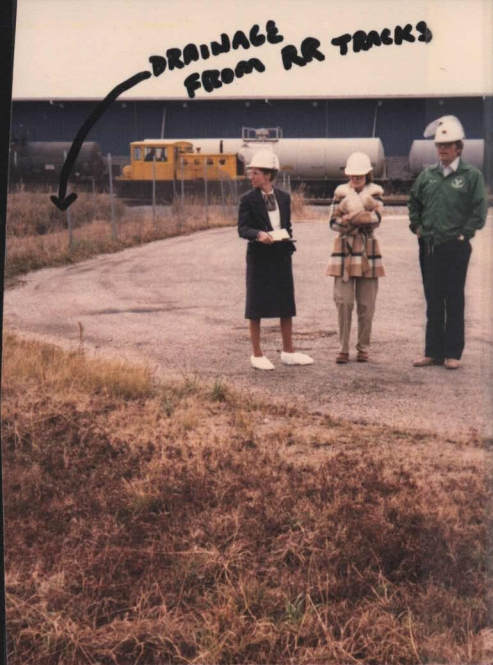
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[illegible]

APPENDIX
E

SITE

PHOTOS



Drainage
from RR tracks

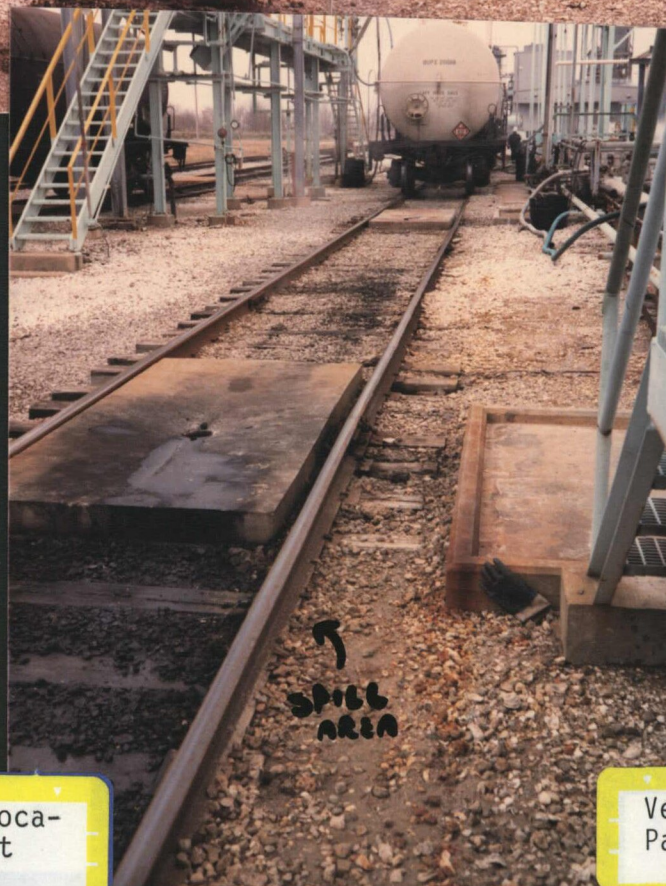
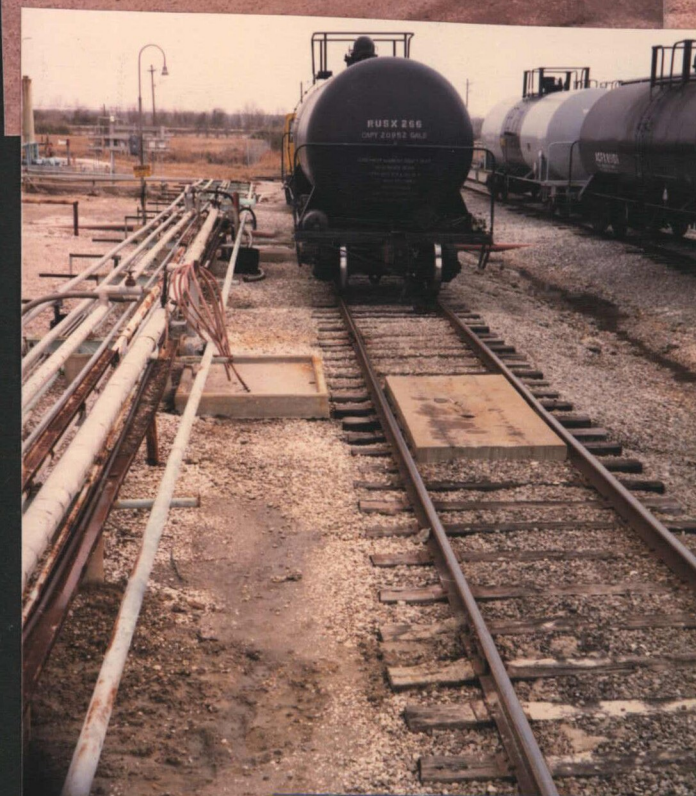


Note closeup
in bottom photo
↓



Train and truck loading facility
(runoff unrestricted) (view toward
south)

Drainage ditch (see lower right-hand
corner of above photo) for loading area
runoff (view toward west)



RR tank car loading area (same location as above) (view toward east and west)

Train and truck loading facility (view toward east)

Velsicol Chemical Corp. - Beaumont, TX
Page 3 of 8

Banvel packaging and shipping warehouse (above photo is continued in photo below) (view toward north)

DRAINAGE FLOW

RR UNLOADING AREA

CONFLUENCE OF DRAINAGE DITCHES

DRAINAGE FLOW

former 2,4,5-T storage
area

BANVEL
WHSE.
↓

Banvel packaging and shipping ware-
house and former 2,4,5-T storage
area (view toward east)



Wastewater pipeline to pond 1A
(view toward north)

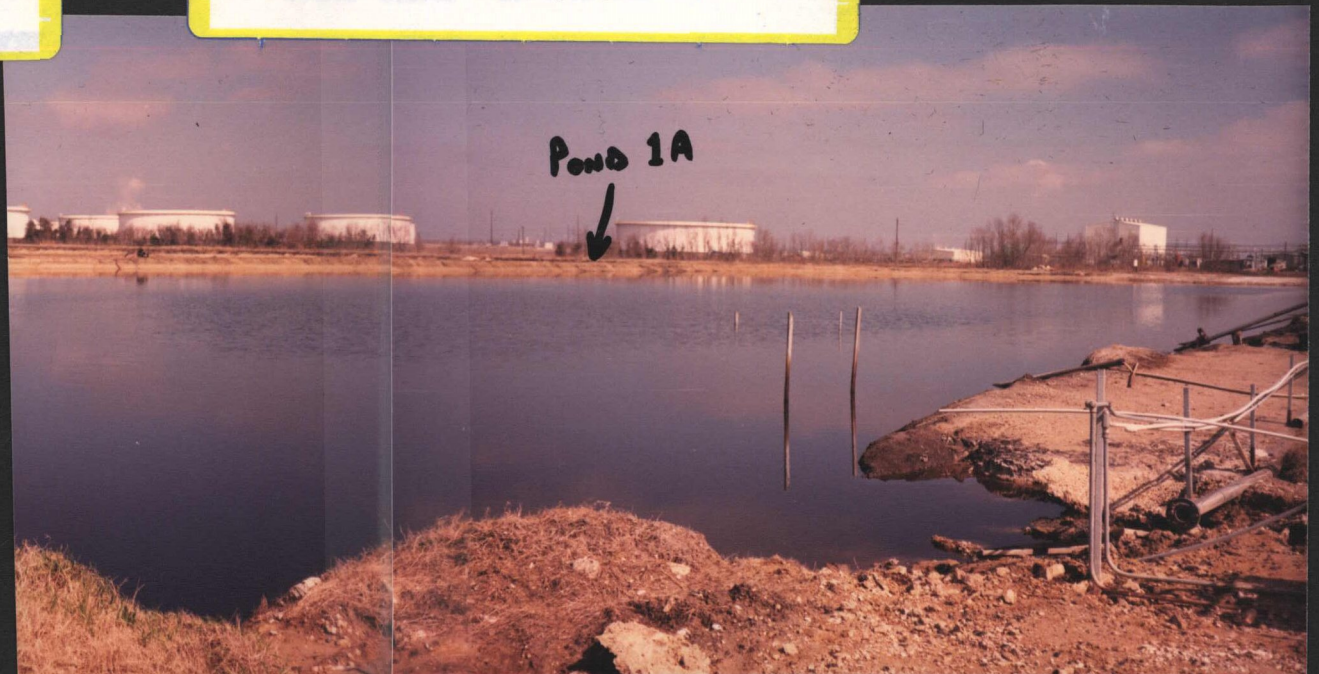


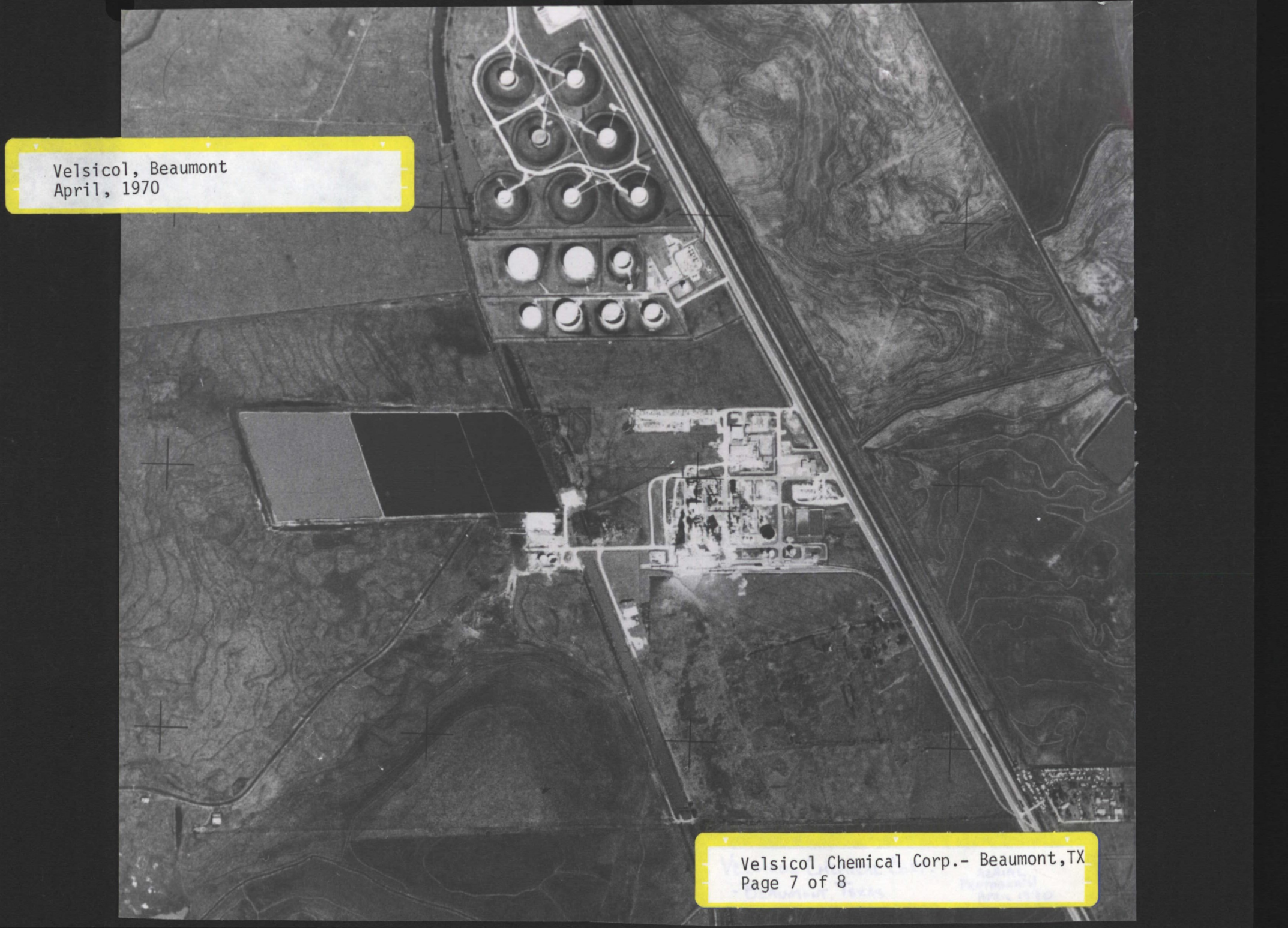
Drainage ditch between Banvel ware-
house and southernmost RR track
(view toward west)



Contaminated stormwater and process
wastewater pond 1A
(view toward north)

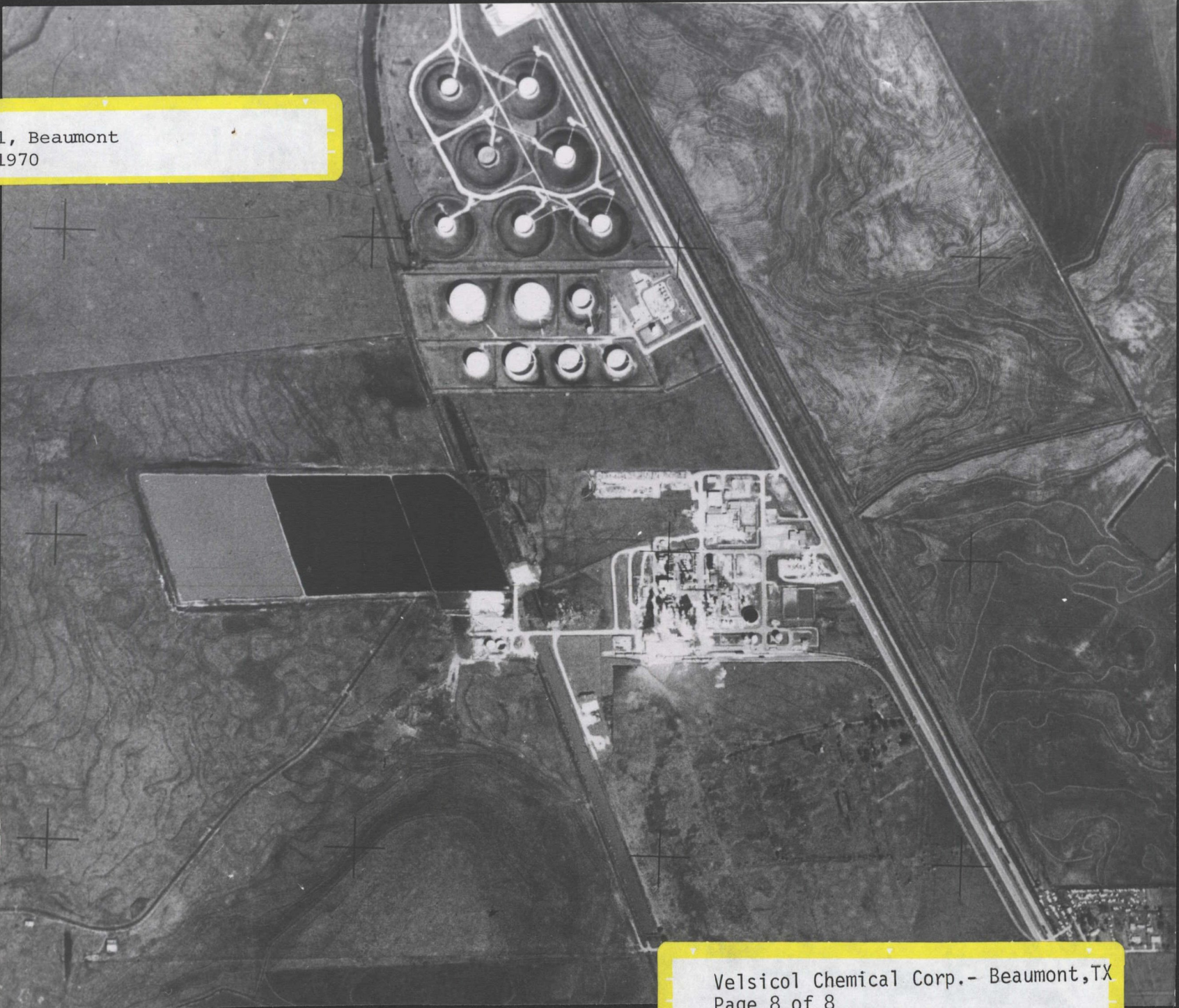
(Above photo is continued in photo
below - Left to Right)





Velsicol, Beaumont
April, 1970

Velsicol Chemical Corp.- Beaumont, TX
Page 7 of 8



Velsicol, Beaumont
April, 1970

Velsicol Chemical Corp.- Beaumont, TX
Page 8 of 8

Velsicol Chemical - Beaumont, TX
USGS 7.5 minute topographic map

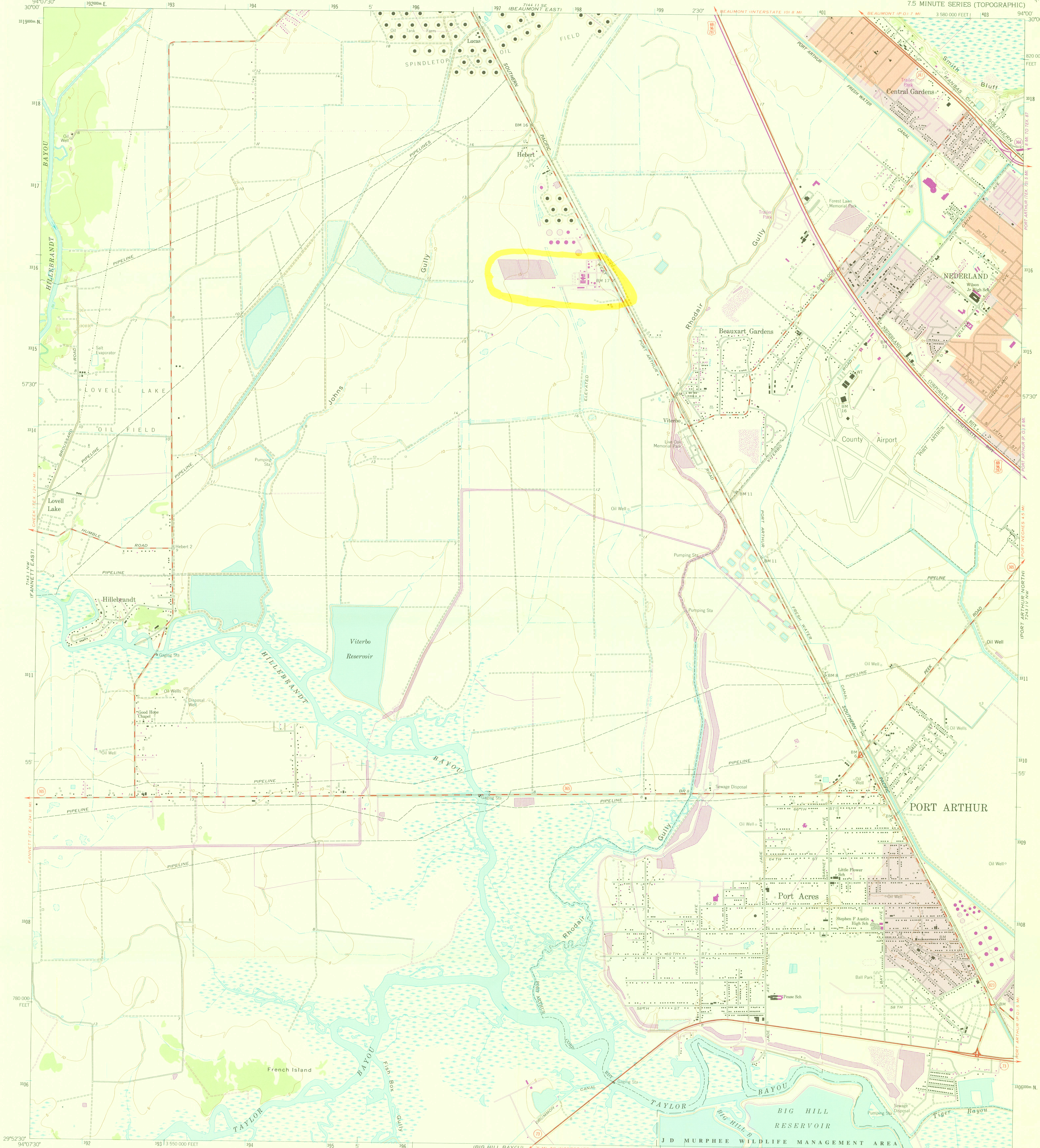
7141.1 SW
(BEAUMONT WEST)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Velsicol Chemical - Beaumont, TX
West Port Arthur Road

PORT ACRES QUADRANGLE
TEXAS-JEFFERSON CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

7241.1 SW
(TERRY)



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Planimetry by photogrammetric methods from aerial photographs taken 1960. Topography enlarged from 1:31 680-scale AMS map of Port Acres quadrangle. Original map by photogrammetric methods and planimetric surveys 1943. Revised 1962

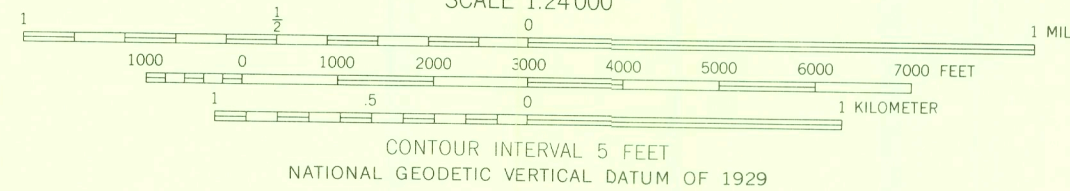
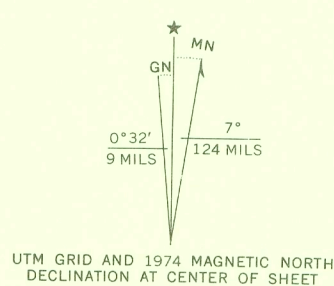
Polyconic projection. 1927 North American datum. 10,000-foot grid based on Texas coordinate system, south central zone 1000-meter Universal Transverse Mercator grid ticks, zone 15, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled from aerial photographs taken 1970 and 1974. This information not field checked

Purple tint indicates extension of urban areas



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION
2994-444

ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
U.S. Route ——— State Route ———

PORT ACRES, TEX.
N2952.5-W9400.7/5

1962
PHOTOREVISED 1970 AND 1974
AMS 7143 1 NE-SERIES V882

APPENDIX G

Table 3-1

Tier 3 Facilities in Region 6 selected for
Sampling under the National Dioxin Study:

<u>Facility</u>	<u>Pesticides Formulated</u>
Mohawk Labs Division (National Chemsearch) 2730 Carl Road Irving, Texas	2,4,5-T
Research Products Co. 2423 Merrell Road Dallas, Texas	Ronnel
Bes-Tex Insecticides Co., Inc. 4652 South Chadbourne San Angelo, Texas	Silvex
CJ Martin Co. 606 W. Maine Street Nacogdoches, Texas 75961	Ronnel (1977-82)
CSA, Limited 16210 FM 149 Houston, Texas 77090	Ronnel (1977-81)
✓ Velsicol Chemical Corp. W. Port Arthur Road Beaumont, Texas 77705	2,4,5-T (1977-81) Tier 6 Chemicals: Dichloropropranolide (1977-81) Dimethylamine Dicamba (1981) Dicamba (1982)
Drew Chemical Corporation 61211 Alameda-Genoa Road Houston, Texas 77048	2,4,5-T

National Dioxin Study
Region 6
Fact Sheet

Date 7-27-84

Site Name: Velsicol Chemical Corporation Tier 3

Location: Rural Route 4, Box 327 City Beaumont

County/Parish Jefferson State TX Zip 77705

Contacts: EPA Contact David Parrish Tel. 214/767-9777

U.S. Congressman Jack Brooks District (9)

U.S. Senators Lloyd Bentsen, John Tower

Governor Mark White Mayor Wm. E. Neild (8-409/838-0847)

State Contact John Latchford (TDWR) Tel 512/475-5695

Sampling Contact Dan McClellan (TDWR) Tel 512/475-5516

Sampling Agency Texas Department of Water Resources

Facility Description: Site is an active chemical plant which was involved in
formulating the compound 2,4,5-T, including salts and esters.

Facility Contact: John Brasington Tel 901/345-1788

Rationale for Sampling: Velsicol was randomly selected form a database of sites
compiled for Tier 3 sampling because they formulated a compound (2,4,5-T)
potentially contaminated with 2,3,7,8-TCDD.

Sampling Date: Planned _____ Actual _____

Results Available: Projected _____ Actual _____

Preliminary Findings: Date _____

Final Results: Date _____

ATTACHMENT 1

Questionnaire # _____

1. Person to be contacted for information pertaining to this questionnaire:

<u>Name</u>	<u>Title</u>	<u>Telephone</u> (include area code)
<u>John Brasington</u>	<u>Env. Technology Coordinator</u>	<u>901/345-1788</u>

2. Name of Company: VELSICOL CHEMICAL CORPORATION

3. Mailing Address: Rural Route 4, Box 327
Street
Beaumont, TX 77705
City State Zip

Latitude/Longitude of Plant: 29°58'15"/94°3'23"
 (If unknown, a full description of location for the purpose of plotting on U.S.G.S. maps.)

4. Name of Owner: VELSICOL CHEMICAL CORPORATION

5. Address of Owner: 341 East Ohio Street
Street
Chicago IL 60611
City State Zip

6. If this plant was acquired or leased from another owner, identify date and lessor or former owner below.

Name Mobil Chemical
 Month April Year 1965

7. Is your company currently, or ever been, involved in formulating, blending, repackaging, or otherwise handling prior to distribution any pesticides containing the following compounds?

a) 2,4,5-T, salts & esters	Yes <u>X</u>	No <u> </u>
b) silvex, salts & esters	Yes <u> </u>	No <u> </u>
c) erbon, salts & esters	Yes <u> </u>	No <u> </u>
d) ronnel, salts & esters	Yes <u> </u>	No <u> </u>
e) hexachlorophene, salts & esters	Yes <u> </u>	No <u> </u>
f) isobac 20, salts & esters	Yes <u> </u>	No <u> </u>
g) 2,4,5-TCP, salts & esters	Yes <u> </u>	No <u> </u>

Note: Actual chemical names for these seven compounds are listed in Table 1.

IF "NO" FOR 7a THRU 7g, CHECK THE ITEM BELOW WHICH BEST DESCRIBES YOUR FACILITY, AND STOP HERE. DETACH AND RETURN PAGE 1 ONLY.

1) Sales Office
 2) Warehouse
 3) Other (Identify)

8a. Provide year(s) for these activities. (If plant was previously owned by another company include these years if known.)

Compound*	Formulating	Blending	Repackaging	Other
a. 2,4,5-T	1975-78, 1981			
b. silvex				
c. erbon				
d. ronnel				
e. hexachlorophene				
f. isobac 20				
g. 2,4,5-TCP				

*Include salts & esters.

8b. Provide total quantities (in pounds) for any of the seven compounds (listed below) used in the activities identified above in 8a.

Compound*	Formulating	Blending	Repackaging	Other
a. 2,4,5-T	598,721			
b. silvex				
c. erbon				
d. ronnel				
e. hexachlorophene				
f. isobac 20				
g. 2,4,5-TCP				

*Include salts & esters.

9. Check the items that best describe the blending/formulating operations at the plant at the end of 1982.

Compound*	In Operation	Temporarily or Seasonally Inactive	Permanently Ceased (Month/Year)
a. 2,4,5-T			X
b. silvex			
c. erbon			
d. ronnel			
e. hexachlorophene			
f. isobac 20			
g. 2,4,5-TCP			

*Include salts & esters.

10. Plant age: 20 years

11. a. Does this plant generate waste (excluding sanitary waste)?
Yes X No

IF NO, PLEASE STOP HERE AND RETURN PAGES 1 & 2 ONLY

12. Is the waste generated a wastewater discharge? Yes _____ No X
If NO, go to question 13.

a. What was the average daily total waste generated by this plant in gallons per day (GPD) and gallons/pound of finished product. If possible list any waste generated for the compounds listed in question 7.

[illegible]

*Process wastewater means any water which, during formulating comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product including rinsing and washing of equipment. Do not include non-contact cooling water.

- b. Provide type of waste disposal, the amount disposed of per year, the waste hauler (when appropriate)* & the disposal location.

	Amount of waste disposed (gals)	'Year'	Amount of waste disposed (gals)	'Year'	Amount of waste disposed (gals)	'Year'	Amount of waste disposed (gals)	'Year'	Amount of waste disposed (gals)	'Year'
1) direct discharge										
Name of receiving water										
2) indirect discharge										
publicly owned										
treatment works (POTW)										
a. Municipal Authority Name:										
b. Municipal Authority Address:										
c. POTW Name:										
d. POTW Address:										
3) discharge to a privately										
owned treatment works										
a. Name:										
b. Address:										
4) deep well disposal										
5) contract hauling										
a. Waste Hauler Name:										
Address:										
b. Disposal Location:										
6) Land disposal										
Disposal Location:										
7) Evaporation										
8) Surface impoundment										
9) Other(specify)										
10) Other(specify)										

*If more than one used, provide same information as b-5 on separate sheet.

12c. Does this plant have a National Pollutant Discharge Elimination System (NPDES) permit? Yes X No

If YES, list the permit number and expiration date, and check the item that characterizes the wastewater discharge covered by the permit.

<u>Permit #</u>	<u>Expiration Date</u>	<u>Wastewater Discharge</u>
<u>TX 0003671</u>	<u>None</u>	<u> </u> Formulating Process*
		<u> </u> Non-Formulating Process
		<u>X</u> Non-process wastewater

*See Page 2 for definition of process wastewater.

12d. If the NPDES permit has expired and has not been renewed, provide the NPDES number for your last permit and the plant's current NPDES application number, and check the items that characterized the wastewater discharge.

<u>Permit #</u>	<u>Expiration Date</u>	<u>Wastewater Discharge</u>
<u> </u>	<u> </u>	<u> </u> Formulating Process*
		<u> </u> Non-Formulating Process
		<u> </u> Non-process wastewater

NPDES application #

*See Page 2 for definition of process wastewater

13. Does this facility generate solid waste which requires disposal?
Yes X No

If YES, complete rest of 13.

Provide type of solid waste disposal, the amount disposed of per year, the waste hauler (when appropriate)* & disposal location.

Method of Disposal	Amount of waste disposed (gals)	Year	Amount of waste disposed (gals)	Year	Amount of waste disposed (gals)	Year
--------------------	--	------	--	------	--	------

a) Contract Hauled:

1. Waste Hauler Name: Browning Ferris
W. Port Arthur Rd.
 Address: Nederland, Texas 77705

2. Disposal Location:

b) Land Disposal:

Disposal Location: Chemical Waste Management
Port Arthur, TX

c) Incinerator

Incineration Location:

Disposal Location of Incineration Ash:

14. How much waste is currently in on-site storage _____ 0 _____ (gallons or drums or tons) circle units.

15. Has there ever been an uncontrolled fire or other similar event at this facility which lead to spontaneous emission releases? Yes _____ No X

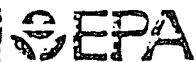
If YES, please provide date(s). _____

Table 1

TIER 3 LIST OF CHEMICALS

General Name	Chemical Name
Erbon	2,2-Dichloropropanoic acid 2-(2,4,5-trichlorophenoxy)ethyl ester
Hexachlorophene	2,2'-Methylene bis(3,4,6-trichlorophenol)
Isobac 20	2,2'-Methylene bis(3,4,6-trichlorophenol), monosodium salt
Ronnel	Phosphorothiotic acid,o,o-dimethyl,o-(2,3,5-trichlorophenyl)ester
Silvex and ester & salts	2-(2,4,5-Trichlorophenoxy) propionic acid and esters & salts
2,4,5-T and esters & salts	(2,4,5-Trichlorophenoxy) acetic acid
2,4,5-T	2,4,5-Trichlorophenol

8306-13



POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION 6 SITE NUMBER 10 00 000
Signed by HQ 4707

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Velsicol Chemical Corp.		B. STREET (or other identifier) West Port Arthur Rd.	
C. CITY Nederland	D. STATE TX	E. ZIP CODE 77705	F. COUNTY NAME Jefferson
G. OWNER/OPERATOR (if known) 1. NAME Velsicol Chemical Corp., Marvin Fannin-Plant Mgr.		2. TELEPHONE NUMBER 901/345-1788	
H. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input checked="" type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			
I. SITE DESCRIPTION Site is an active manufacturing facility producing Banvel (dicamba) herbicide from 3,4-dichloro phenol. Previous site owners produced Terephthalic acid. Facility began operation in 1974.			
J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) EPA Document 600/2-80-197 "Dioxins"			K. DATE IDENTIFIED (mo., day, & yr.) 11/19/80
L. PRINCIPAL STATE CONTACT 1. NAME Mike Moore, TDWR		2. TELEPHONE NUMBER 409/883-2973	

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE <input checked="" type="checkbox"/> 5. UNKNOWN		
B. RECOMMENDATION <input type="checkbox"/> 1. NO ACTION NEEDED (no hazard) <input checked="" type="checkbox"/> 2. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: FIT <input type="checkbox"/> 3. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: <input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)		
C. PREPARER INFORMATION 1. NAME F. J. Anderson, FIT	2. TELEPHONE NUMBER 214/742-4521	3. DATE (mo., day, & yr.) July 28, 1983

III. SITE INFORMATION

A. SITE STATUS <input checked="" type="checkbox"/> 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.) <input type="checkbox"/> 2. INACTIVE (Those sites which no longer receive wastes.) <input type="checkbox"/> 3. OTHER (specify):		
B. IS GENERATOR ON SITE? <input checked="" type="checkbox"/> 1. NO <input type="checkbox"/> 2. YES (specify generator's four-digit SIC Code): 2879		
C. AREA OF SITE (in acres) 200; 100 in plant area	D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 1. LATITUDE (deg.-min.-sec.) 29° 58' 14" N 2. LONGITUDE (deg.-min.-sec.) 94° 03' 28" W	
E. ARE THERE BUILDINGS ON THE SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify): Plant, lab, and offices		

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X1 A. TRANSPORTER	X1 B. STORER	X1 C. TREATER	X1 D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	X 1. LANDFILL
2. SHIP	X 2. SURFACE IMPOUNDMENT	2. INCINERATION	X 2. LANDFARM
3. BARGE	X 3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
4. TRUCK	X 4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM/PHYS. TREATMENT	5. MICHIGAN DUMPING
6. OTHER (specify):	6. OTHER (specify):	XX 6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	X 7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

2. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

All process water and rainfall collected from the process area is collected in tanks or impoundments west of the plant for injection well disposal (photo 7). Injection wells are approximately 6000 ft. deep. Silt from raw water supply is disposed of in a landfill/landfarm south of plant (Photo 8). Construction debris is disposed of in a

(See Attachment A)

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1. UNKNOWN ☒ 2. LIQUID ☒ 3. SOLID ☒ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☒ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5. HIGHLY VOLATILE
☐ 6. TOXIC ☐ 7. REACTIVE ☐ 8. INERT ☒ 9. FLAMMABLE

☐ 10. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Yes, manifests

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
None	None	None	24,000	None	160,000,000
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
-	-	-	gal/month	-	gal/year
X1 (1) PAINT, PIGMENTS	X1 (1) OILY WASTES	X1 (1) HALOGENATED SOLVENTS	X1 (1) ACIDS	X1 (1) FLYASH	X1 (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGENATED SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) PCTD		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINING TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELT. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMELT. WASTES	X1 (5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	Potentially contaminated water from plant.
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			X1 (11) OTHER (specify):		
			3,4-dichloro phenol waste		

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

TCDD isomers	toluene
2,4-dichloro phenol	1,2,4-trichloro benzene
dicamba	
terephthalic acid.	

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

Raw process water supply from Lower Neches Valley Authority, stored on site. All drinking water at site is bottled according to site representative.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH	X			Potential TCDD contamination
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL		X	1974	Velsicol was fined for a fish kill in Rhodair Gully.
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

Continued From Front

VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- ☒ 1. NPDES PERMIT ☒ 2. SPCC PLAN ☒ 3. STATE PERMIT (specify): Solid Waste Registration #30053
☒ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. ACRA TRANSPORTER
☒ 7. RCRA STORER ☒ 8. RCRA TREATER ☒ 9. RCRA DISPOSER TXD067261412
☒ 10. OTHER (specify): Injection well permits WDW 125 & WDW 155

B. IN COMPLIANCE?

- ☒ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

A. WITH RESPECT TO (list regulation name & number):

VIII. PAST REGULATORY ACTIONS

- ☐ A. NONE ☒ B. YES (summarize below)

Fine for fish kill 1974.

IX. INSPECTION ACTIVITY (past or on-going)

- ☐ A. NONE ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (month, day, & yr.)	3. PERFORMED BY (EPA/State)	4. DESCRIPTION
Annual-inspection			TDWR, TAQCB

X. REMEDIAL ACTIVITY (past or on-going)

- ☒ A. NONE ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (month, day, & yr.)	3. PERFORMED BY (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.



Sample #4 - blank





Sample #122 - blank to spike

